# PROJECT SUMMARY
# Sulphur/Barry Creek Confluence Restoration Project
# Environmental Review
# Feather River Coordinated Resource Management (FR-CRM)
# Plumas Corporation
# September 2007

Prior to degradation, Barry Creek entered Sulphur Creek on a meadow floodplain. Both channels are currently downcut to an elevation six to eight feet below the surface of the floodplain. The proposed project would reconnect these channels to the floodplain using the "plug-and-pond" technique. The existing entrenchment leads to several synergistic and self-reinforcing conditions. The primary dysfunction is that flood flows have become trapped within the entrenchment rather than spreading out onto the floodplain. This puts pressure on the banks that leads to bank erosion and further widening until an adequate floodplain has been eroded out at the lower entrenched elevation. The widening and downcutting continues at the project site. The high flows and velocities within the entrenched channel have developed the capacity and competency to carry excessive sediment and bedload to downstream reaches. This material would have been deposited on the floodplain before the entrenched condition. It is the loss of the depositional function of the channel/floodplain that the project primarily seeks to address. Additional benefits of channel/floodplain function restoration are groundwater storage, and attendant riparian vegetation and habitat that are restored when the channel is lifted back up onto the floodplain.

The proposed project would convert 775 feet of the entrenched Barry Creek channel and 600 feet of the entrenched Sulphur Creek channel into a series of eight total ponds and plugs. The low flow of both channels would be re-routed into existing remnant channels on the floodplain, and would confluence at the floodplain elevation. 400 feet below the confluence, the channels would be directed (because of an existing topographical valley constriction) onto a constructed step-pool rock/earth grade control structure that would drop the restored Sulphur Creek channel back down to its entrenched elevation below the project.

The pond and plug technique is an economical way to eliminate a dysfunctional channel. The plugs (that fill the entrenchment to the floodplain elevation) effectively eliminate the entrenched channel as the floodplain drain. The ponds provide the soil for the plug building. The ponds and plugs are part of the floodplain. Elevation of water in the ponds is a reflection of the elevation of groundwater. All exposed soil areas, including the soil plugs and around the top edge of the ponds would be vegetated with locally collected native material.